COMMONWEALTH OF VIRGINIA



ENTERPRISE TECHNICAL ARCHITECTURE

WEBSITE TOPIC REPORT APPLICATION DOMAIN

Virginia Information Technologies Agency

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Website Topic Report - 2011

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Publication Version Control

Questions related to this publication should be directed to VITA's Policy, Practice, and Architecture (PPA) Division. PPA notifies Agency Information Technology Resources (AITRs) at all state agencies, institutions and other interested parties of proposed revisions to this document.

	Website Topic Report: Version History		
Revision	Date	Description	
1.0	04-01-2009	This Website Topic Report combines information from the Website Policy (ITRM GOV105-00), Website Standard (ITRM GOV106-01), Website Guideline (ITRM GOV107-00) and the Internet Privacy Guideline (SEC2001-02.1) into a single topic report. NOTE: The numbering scheme for Principles, Recommended Practices and Requirements in this topic report is sequential. Each Principle's, Recommended Practice's and Requirement's number is unique and will not be reassigned if a Principle, Recommended Practice or Requirement is superseded or rescinded.	
2.0	10-19-2011	This revision of the Website Topic Report updates technical requirements and recommended practices to reflect current trends in website design including the requested use of horizontal navigation, introduces social media and mobile applications, and temporarily exempts the Commonwealth of Virginia web portal from implementing the template requirements.	

Identifying Changes in This Document

- See the latest entry in the revision table above.
- Vertical lines in the left margin indicate the paragraph has changes or additions. Specific changes in wording are noted using italics and underlines; with italics only indicating new/added language and italics that are underlined indicating language that has changed.

The following examples demonstrate how the reader may identify requirement and recommend practice updates and changes:

EXA-R-01	Example with No Change –	The text is the same.	The text is the same.
	The text is the same.		

- **EXA-R-02** Example with Revision The text is the same. <u>A wording change, update or clarification is made in this text.</u>
- **EXA-R-03 Example of New Text –** This language is new.
- **EXA-R-03** Technology Standard Example of Deleted Standard—This standard was rescinded on mm/dd/yyyy.

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Executive Summary of ETA Website Topic

The Enterprise Technical Architecture Application (ETA) Website Topic Report is a subset of the ETA Application Domain Report. The Application Domain provides agencies with a foundation of development and support platforms, tools, processes, practices and requirements that can be used to implement business processes and meet the Commonwealth's ever changing business needs.

The application architecture promotes common presentation standards to facilitate rapid training and implementation of new applications and functions. Good application architecture enables a high level of system integration, reuse of components and rapid deployment of applications in response to changing business requirements. As a topic of the ETA Application, this report expands on the principles, requirements and recommended practices presented in the ETA Application Domain report.

The *ETA Website Topic Report* provides a common website template for all Agencies. All *principles,* requirements *and recommended practices* identified in this report are adopted as ITRM standards in the current version of the EA Standard (ITRM EA225). This includes, but is not limited to standards from the <u>World Wide Web Consortium (W3C)</u>, the <u>Web Accessibility Initiative (WAI)</u>, and other standards bodies referenced, such as <u>Section 508 of the Rehabilitation Act of 1973</u>, as amended.

A "checklist" of the website principles, requirements and recommended practices will also be posted on the "IT Accessibility Standards, Website Standards & Website Guidelines" page of the VITA website and on the Department of Rehabilitative Services' "Web Accessibility and Training Guide" (WATG) website.

Introduction

Definition of Key Terms

This document presents architecture direction for agencies when planning or making changes or additions to their information technology through:

- <u>Principles</u> high-level fundamental truths, ideas or concepts that frame and contribute to the understanding of the ETA.
- Requirements statements that provide mandatory Enterprise Architecture direction.
- <u>Recommended Practices</u> statements that provide guidance to agencies in improving cost efficiencies, business value, operations quality, reliability, availability, decision inputs, risk avoidance or other similar value factors. Recommended Practices are optional.

Glossary

As appropriate, terms and definitions used in this document can be found in the COV ITRM IT Glossary. The COV ITRM IT Glossary may be referenced on the ITRM Policies, Standards and Guidelines web page at http://www.vita.virginia.gov/library/default.aspx?id=537.

Information Scope

Website Technical Components
Virginia Common Template – Page Elements
Virginia Common Template – Site and Application Content
Virginia Common Template – Site Design Consideration
Implementation
Technology Component Standard
Website Compliance Tools on Statewide
Appendices

Website Topic Scope

The purpose of the website topic is to encourage greater efficiencies and effectiveness in the use of technology to accomplish government business. This report provides guidance and direction to assist agencies in developing a common look and feel to all agency public websites. By creating a new accessibility template and requirements, this report helps website developers to make the user's experience as pleasant and trouble-free as possible.

The topic brings together relevant requirements established by the *Code of Virginia*, the Governor, the Secretary of Technology, and the Chief Information Officer of the Commonwealth that affect website services provisioned by agencies. The goals of this topic are to create a useable and accessible template and set of requirements for all agencies to implement and to establish specific content and update requirements. Achieving these goals will move Virginia government from the "stovepipe" designs of the last decade to a truly unified "one government" of the 21st century. The topic ensures websites follow basic rules of proper design. A site that is badly designed may be complete with valuable

information, but if people cannot easily (without detailed knowledge of the structure of government) access the information they will go elsewhere and valuable IT dollars will have been wasted.

The topic makes use of a wide body of research and studies, including those guidelines established by the World Wide Web Consortium (<u>W3C</u>), the Web Access Initiative (<u>WAI</u>), as well as <u>Section 508</u> guidelines from the Architectural and Transportation Barriers Compliance Board (<u>Access Board</u>) of the U.S. Federal Government. The Website Topic Report focuses on the design requirements directly related to websites.

Overall Website Topic Scope

This topic report addresses accessibility, template and implementation requirements and agency plans for implementing those requirements. The report has been organized in sections as follows:

- Those items to be addressed on every agency web page
- The site and application content to be included on every agency website
- The design considerations for every agency website
- The external content to be included on every agency website
- The implementation and Web 2.0 considerations for every agency

Agency Exception Requests

Agencies that want to deviate from the requirements and/or technology standards specified in COV ITRM Standards may request an exception using the *Enterprise Architecture Change/Exception Request Form.* All exceptions must be approved prior to the agency pursuing procurements, deployments or development activities related to technologies that are not compliant with the standard. The instructions for completing and submitting an exception request are contained in the current version of *COV ITRM Enterprise Architecture Policy.* The policy and exception request form is on the ITRM Policies, Standards and Guidelines web page at http://www.vita.virginia.gov/library/default.aspx?id=537.

The following entities are considered to be exempt from implementing the template requirements.

- The Virginia Tourism Corporation
- The Library of Virginia
- Museums
- Institutions of Higher Education
- Commonwealth of Virginia Web Portal

All other agencies are to implement both the template and the accessibility and usability requirements. If an agency believes it should be exempt or be granted an exception, the agency is allowed the option of applying to be exempt or for an exception from the template implementation as described above.

Future Website Initiatives

Future website related topics include the development of additional principles, requirements and recommended practices for web audio/video, website translation engines and other emerging web technologies.

Topic-wide Principles, Recommended Practices and Requirements

The following principles, recommended practices and requirements pertain to all components, in all situations and activities related to the ETA Applications Website Topic. Component specific principles, recommended practices and requirements will be discussed in the next section of the report.

Topic-wide Principles

The following are website topic-specific principles:

WEB-P-01: User-Centric Approach – The Commonwealth's portal and all agencies

within the portal shall have websites that are intuitive, easy to use, and accessible to all users. Jargon, program names and acronyms should be

avoided or explained when they would be confusing to visitors.

WEB-P-02: Accessibility Principle – Agency websites shall be made accessible to

all citizens and employees with disabilities to the same or an equivalent

level of access and use that is available to citizens and employees

without such disabilities.

The Virginia Information Technology Accessibility Standard provides direction and requirements to agencies to develop agency websites that enable Virginia citizens and Commonwealth employees with disabilities to have access to and use of information and data comparable to the access and use by Commonwealth employees and Virginia citizens who do not have disabilities.

For details on any of the web content accessibility guidelines, please see the referenced checkpoint in the World Wide Web Consortium's (W3C) Web Accessibility Initiative's (WAI) Web Content Accessibility Guidelines 1.0 (WCAG). Please see WCAG checkpoints: http://www.w3.org/TR/WCAG10/full-checklist.html.

Topic-wide Recommended Practices

There are no website topic-specific recommended practices at this time.

Topic-wide Requirements

There are no website topic-wide requirements at this time.

Website Technical Components

Each agency is responsible for ensuring that all public content and web applications related to their agency adhere to the website related requirements identified in this document and adopted as COV ITRM requirements in the ETA Standard. This requires that any Service Level Agreements (SLA) entered into by an agency will outline the responsibility of ensuring that all content and web applications related to their agency adhere to the template requirements.

Sharing recommended practices related to the functions of websites may aid agencies in reducing cost, improving management practices, and improving services and tools for the government and its citizens. Website architecture should be an enterprise solution that focuses on the needs of citizens and businesses. Its design should be intuitive, easy to use, and accessible, without jargon, confusing program names, and acronyms.

The following requirements address a common web template for publicly accessible state websites and the state Internet Portal. Standardization with respect to these requirements provides a user-focused web presence for the Commonwealth. The Web Accessibility and Template Guide (WATG) is located at http://www.vadsa.org/watg/ and is available to assist developers in implementing the website requirements.

The checkpoints referenced in this report are recommendations published by the World Wide Web Consortium (W3C). The W3C is an industry consortium which seeks to promote standards for the evolution of the web and interoperability between WWW products by producing specifications and reference software. Although W3C is funded by industrial members, it is vendor-neutral, and its products are freely available to all. The direction provided by the checkpoints in this report is considered incorporated into the recommended practices and requirements in the report.

Virginia Common Template - Page Elements

These elements provide a common web template and corresponding guidance and direction related to all the components an agency must put on every page of its website. The guidance and direction is provided in the form of recommended practices and requirements that bring together relevant best practices that affect website services provided by state agencies. For additional guidance, a Web Accessibility and Template Guide (WATG) were created by the Department of Rehabilitative Services to assist agency developers in implementing the requirements identified in this report. That guide can be accessed at: http://www.vadsa.org/watg/.

An important objective of the common template requirement is to create a user¹-focused, or "user-centric," web presence for the Commonwealth, including a common look and feel to all agency websites. This objective is addressed by creating a template and set of website requirements for all Agencies to implement that assist in making the agency web pages accessible and usable. An essential objective of this requirement is to assist in making the website user's experience as pleasant and trouble-free as possible. It also includes putting

¹ In the case of government Websites, a "user" is any visitor to that site, targeted or untargeted. It is possible for a user base to have several sub-groups of users, in which case it is acceptable to target specific user groups. If specific user groups are targeted for a public-facing site, there must be a clear distinction made to visitors when they leave the public user site and enter more specific targeted sections.

government services and content where citizens can easily find them, and in a format that is easy to use.

Code containing the "Commonwealth Banner," all links contained within the banner, sample template code and specifications are located at the WATG site: http://www.vadsa.org/watg/. All approved requirements are built into the template, but each agency is responsible for its content and ensuring that the content it adds remains compliant with the Common Template requirements identified in this report and the Wirginia Information Technology Accessibility Standard (ITRM GOV103-00).

The Department of Rehabilitative Services maintains a site that provides statistical analysis for accessibility (WCAG 1 / Section 508) and detailed reporting for all Commonwealth executive branch agency websites. This site is located at: http://www.vadsa.org/scorecard/

All approved requirements are built into the template, but each agency is responsible for its content and ensuring that the content it adds remains compliant with the Common Template requirements identified below.

Commonwealth Banner

The Commonwealth Banner is the black bar that appears at the top of Virginia government web pages. It contains links relevant to all agencies. It also contains the state-wide Virginia.gov search box.

WEB-R-01:

Commonwealth Banner Code, Content and Location – The code containing the black "Commonwealth Banner" shall be used on all agency websites and is available on the WATG site (http://www.vadsa.org/watg/).

- "Skip to Content" -(skip-nav) shall be hidden within the code of the Commonwealth Banner to allow screen reader access at the beginning of each page.
- "Virginia.gov" logo left align
- "Online Services" left align
- "Agencies" left align
- "Governor" left align
- "Help" left align
- "Search Virginia.gov" right align text link
- The "Commonwealth Banner" shall be 40 pixels in height in its default mode. It should be noted that this area shall be permitted to grow to accommodate changes in font sizes through user specification or scripting such as CSS and/or JavaScript that allow font sizes to change. This section shall be scalable, but always default to no more than 40 pixels in height with standard font sizes.
- The "Commonwealth Banner" shall be black and posted above the "Agency Site Banner" area at the top of every page of each site. It shall contain the enterprise search feature which shall allow users to access this functionality across all state sites. The statewide search box-link shall contain the text "Search Virginia.gov" to clearly identify its function.

Rationale:

To concentrate in one location the requirements related to the "Commonwealth Banner."

WEB-R-02: Commonwealth Banner Location — This requirement was combined with WEB-R-01 on 10/19/2011.

WEB-R-03: Commonwealth Banner Height – This requirement was combined with WEB-R-01 on 10/19/2011.

WEB-R-04: Commonwealth Banner Height — This requirement was combined with WEB-R-01 on 10/19/2011.

Virginia Common Template

The Virginia common template is a visual arrangement of web page elements. It specifies where common items shall appear so users know where to look for them and to have a unified look-and-feel across Virginia government websites.

WEB-R-05:

Virginia Common Template – All Executive Branch agencies shall use the Virginia Common Template for public websites and web applications, except the following exempt entities:

- The Virginia Tourism Corporation
- The Library of Virginia
- Museums
- Institutions of Higher Education
- Commonwealth of Virginia Web Portal

Extranets and Intranets are not required to follow any website requirements, but still must comply with the current version of the COV ITRM Accessibility Standard (GOV103).

Rationale:

Standardization with respect to this requirement provides a user-focused web presence for the Commonwealth.

Text Only Site

A "Text only site" is a version of the main site that uses only text. Every web page has an alternate web page with the same content and text descriptions for visual information (graphics, charts, etc.).

WEB-R-06:

Text Only Site – If an agency uses a text-only site, that link shall be <u>hidden in the code prior to</u> in the Commonwealth Banner of the template and the text-only site shall be updated at the same time as the standard site.

Agency Site Banner

The Agency <u>Site</u> Banner is the area below the top black Commonwealth Banner and above the Navigation Trail. It contains the agency name and often contains graphics related to the agency.

WEB-R-07:

Agency Site Banner Height & Resolution - Each agency shall create its own Agency Site Banner for use in the template; it shall be 100 pixels high and able to accommodate screen resolutions 1024 and wider gracefully.

The Agency Site Banner shall contain the full agency name and be created in one of the specified standard fonts.

If top navigation with dropdowns is used, the dropdowns may temporarily overlap the Navigation Trail and content area as long as the dropdowns can be closed so users can access the Navigation Trail and content area.

Other items, design or functional, may be used in this area based on each agency's business needs.

Enterprise and/or mandated graphic and other independent WEB-R-43:

links - Enterprise and/or mandated graphic and other independent links on the left side of the page must be visually separated and below the navigation links to avoid user confusion and do not count towards the 12-link limit. Examples include graphic links to agency-specific reports on Commonwealth Data Point and Virginia Performs. These graphic links should be clearly delineated from the primary navigation to assist the user; they may or may not appear on each page beyond the home page, as determined by the agency. The Virginia Information Technologies Agency (VITA) must approve exceptions prior to site redesign implementation.

WEB-R-08:

Agency Site Search & Agency Name - The "Agency Banner" shall contain the full agency name and be created in one of the specified standard fonts. If a site contains more than 36 pages it must provide an agency site search box which must appear on every page and be located in the upper right quadrant of the page in either the agency site banner or the content directly below the breadcrumb bar.

WEB-RP-01: Real-time Customer Service - Agencies that deal directly with a large group of constituencies on a regular basis should consider implementing real-time, online customer service such as the interactive customer service "Live Help" feature on the Virginia.gov portal.

Navigation Trail

The Navigation Trail or "breadcrumb trail" appears below the "Agency Site Banner." It shows the route from the homepage to the page the visitor is on. Using the Navigation Trail links, visitors can return to previous or parent pages. The links can help orient a user. In the common template, the Navigation Trail also contains a link to the agency Contact Us page and the site-wide search box.

The following are requirements related to Navigation Trails:

WEB-R-09:

Navigation Trail Bar Location - A "breadcrumb" navigation trail bar shall be located below and contiguous to the "Agency Site Banner" in the template.

WEB-R-10: Navigation Trail "Bread Crumb" Text Location – The breadcrumb text shall be located on the left side of the navigation bar. See Glossary: "breadcrumb"

- **WEB-R-11:** Navigation Trail Height & Resolution The Navigation Trail shall not exceed 25 pixels in height in its default mode. This area shall be permitted to grow to accommodate changes in font sizes through user specification or scripting such as CSS and/or JavaScript that allow font sizes to change. This section shall be scalable, but always default to no more than 25 pixels in height with standard font sizes.
- **WEB-R-12:** Navigation Trail "Contact Us" link —This Requirement was superseded by WEB-R-17 on 10/19/2011.
- **WEB-R-13:** Navigation Trail Agency Search Requirement was superseded by WEB-R-08 on 10/19/2011.

The following are recommended practices related to Navigation Trails:

WEB-RP-02: Provide Navigation Mechanisms – Provide access to content through a variety of navigation mechanisms, including sequential navigation, direct navigation, searches and structured navigation, as appropriate.

Rationale:

Users should be able to navigate to important pieces of content within a configurable view, identify the type of object they have navigated to, interact with that object easily (if it is an <u>enabled element</u>), and review the surrounding context (to orient themselves). Providing a variety of navigation and search mechanisms helps users with disabilities, as well as users without disabilities, access content more efficiently. Navigation and searching are particularly important to users with <u>serial access</u> to content or who <u>navigate sequentially</u> (by moving the focus).

Direct navigation is important to users with some physical disabilities (who may have little or no manual dexterity and/or increased tendency to push unwanted buttons or keys) and to users with visual disabilities. Expert users also will benefit from direct navigation. Direct navigation may be possible with the pointing device or the keyboard (e.g., keyboard shortcuts).

User agents should allow users to navigate to content known to be structurally important, such as blocks of content, headers and sections, tables, forms and form elements, enabled elements, navigation mechanisms and containers.

WEB-RP-03: Orient the User – Provide information that will help the user understand browsing context.

Rationale:

All users require clues to help them understand their location when browsing: where they are, how they got there, where they can go and what is nearby.

Navigation Links

Navigation Links refer to the main links on the left side of agency web pages. They generally link to major areas or categories on a site.

WEB-R-14: Number of Primary Navigation Links -

- The primary navigation may be located on the left side of the page immediately below the breadcrumb bar or in the Site Banner.
- If the primary navigation is on the left side of the site, no more than twelve main navigation links shall be used.
- If the primary navigation is in the Site Banner, no more than eight main navigation links shall be used.
- A site may have (but is not required to have) both a left column of navigation and a top navigation bar. If a site uses both, the primary links can only appear in one of the two locations.
- Primary links shall remain the same throughout the site.
- Graphics and other links on the left side of the page must be visually separated and below navigation links to avoid user confusion.

Rationale:

To avoid clutter, apply uniform navigation, and to improve the usability across all Commonwealth websites.

WEB-R-15:

Number of Sub-navigation Links – There shall be no more than twelve sub-navigation links for a primary navigation link. Sub-navigation shall appear in the left-hand navigation area as long as they are <u>be</u> visually distinct from the main navigation links (e.g. indented, flyout, different color, <u>different location</u>, etc). <u>Sub-navigation links shall be semantically distinct from the main navigation links</u>. Sub-navigation links shall not count towards the twelve primary navigation link limit, and may vary from page to page.

Rationale:

To permit greater link decomposition and delineation within the primary link area while avoiding confusing clutter. Sub-navigation links can vary from page to-page.

Content Sections

Content Sections are the one or more areas in the content portion of an agency web page. This is where the page content goes.

- **WEB-R-16: Content Sections** All of the columns in the content area shall fit into a resolution 1024x768 without left to right scrolling; however, the number of columns in the content area is at the discretion of the agency.
- **WEB-RP-04:** Ensure User Control of Time-Sensitive Content Changes Until user agents provide the ability to stop auto-redirect, do not use markup

to redirect pages automatically. Instead, configure the server to perform redirects. WAI WCAG 2 checkpoint 7.5

WEB-RP-05: Provide Context and Orientation Information – Divide large blocks

of information into more manageable groups where natural and

appropriate. WAI WCAG checkpoint 12.3

WEB-RP-06: Ensure User Access to All Content – Ensure that users have access

to all content, notably conditional content, such as the "alt" and "label" attributes that may have been provided to meet the requirements of the

Web Content Accessibility Guidelines 1.0 [WCAG10]

Page Footer

The Page Footer is the area at the bottom of an agency web page. It contains specific standard information about the site.

WEB-R-17 Page Footer - Each page shall have a footer containing, at a minimum, the following information:

- Agency name
- Copyright information
- Text or an approved icon link stating WAI compliance.
- Link to the agency's Internet Privacy Policy.
- <u>"Contact Us" link (Agencies may add other "Contact us" links as desired; only this one is mandated.)</u>

Language Translation

Language Translation refers to links to versions of a given page in other languages. Generally the translation is automated on the fly, but agencies could link to hand-crafted translations of select pages.

There are several free language translators available today that automatically translate the HTML content on a website. These translators allow the non-English speaking user of the website to understand the general intent of the site, but do not provide a polished translation of the site. For the best results the English text should use proper grammar and punctuation, and avoid the use of slang and complex or lengthy sentences.

An alternative solution to automatic translation services is to provide just the most essential information from your site into the different preferred language(s) by means of an actual human language translator. This option may be possible since this shall not require the entire site being translated.

The website should caution that the translators are offered as a service to non-English speaking users and are provided "as is." No warranty of any kind, either expressed or implied, is made as to the accuracy, correctness or reliability of any translations made from English into any other language, or translations from any foreign language into English. Some pages may not be accurately translated due to the limitations of the translation software, such as dynamic or interactive pages.

² The World Wide Web Consortium (W3C) is the main <u>international standards organization</u> for the <u>World Wide Web</u> (abbreviated WWW or W3). It is arranged as a <u>consortium</u> where member organizations maintain full-time staff for the purpose of working together in the development of standards for the <u>World Wide Web</u>. As of February 2008, the W3C had 434 members.

Automatic language translators can have a difficult time translating graphical elements, so forethought should be taken in utilizing these elements, especially when they contain important and essential information for the user. This also applies to PDF documents. If you have important and essential information in this format alone, you should also provide an HTML text equivalent for the automatic language translators to read and interpret.

WEB-RP-08: Language Translation – Agencies should consider providing an automatic translation service for the HTML content on the agency website as a potential aid to non-English speaking users in understanding the general intent on the site.

Rationale:

For consistency and ease of use, all Commonwealth of Virginia sites should place automated translators in the same place on their sites. The footer is an easy to find place that doesn't distract from the main content of the page.

Virginia Common Template - Site and Application Content

This section identifies the various items that an agency must address or add to their website and application content.

WEB-RP-07: Advertisements or Commercial Banners – should not appear unless authorized by the Commonwealth of Virginia or the agency.

Web Content Accessibility

Web Content Accessibility refers to coding practices that aid in accessing online content.

Best business practices provide accessible user agent documentation and help, ensure that the user can learn about software features that benefit accessibility from the documentation and that the documentation is accessible. Users can find the User Agent Accessibility Guidelines (UAAG) and checkpoints at: http://www.w3.org/TR/WAI-USERAGENT. Documentation of the user interface is important, as is documentation of the user agent's underlying functionalities. While intuitive user interface design is valuable to many users, some users may still not be able to understand or be able to operate the native user interface without thorough documentation. For instance, a user who is blind may not find a graphical user interface intuitive without supporting documentation.

- WEB-RP- 09: Accessible Version of the User Agency Documentation Ensure that at least one version of the user agent <u>documentation</u> conforms to at least level Double-A of the Web Content Accessibility Guidelines 1.0. WAI UAAG <u>checkpoint 12.1</u>
- **WEB-RP- 10:** Accessible Features Documentation Provide <u>documentation</u> of all user agent features that benefit accessibility. WAI UAAG checkpoints <u>12.2</u>, <u>12.3</u>, and <u>12.4</u>
- **WEB-RP- 11:** Centralized View of Accessible Features Provide a centralized view of all features of the user agent that benefit accessibility, in a dedicated section of the <u>documentation</u>. WAI UAAG <u>12.5</u>

WEB-RP-12: Design for Device-Independence – Create a logical tab order through links, form controls, and objects. WAI WCAG checkpoint 9.4

Rationale:

Although it is possible to make most content accessible, however, if an accessible page cannot be created, a link should be provided to an alternative page that uses W3C technologies, is accessible, has equivalent information (or functionality), and is updated as often as the inaccessible (original) page.

- **WEB-RP-13: Use Interim Solutions** Until user agents, including assistive technologies, render adjacent links distinctly, agencies should include non-link, printable characters (surrounded by spaces) between adjacent links. WAI WCAG checkpoint <u>10.5</u>
- **WEB-RP-14:** Support Input and Output Device-Independence Ensure that the user can interact with the <u>user agent</u> (and the <u>content</u> it renders) through different input and output devices.

Rationale:

Since people use a variety of devices for input and output, user agent developers need to ensure redundancy in the <u>user interface</u>. The user may have to operate the user interface with a variety of input devices (e.g., keyboard, pointing device, and voice input) and output modalities (e.g., <u>graphical</u>, speech, or Braille rendering). Though it may seem contradictory, enabling full user agent operation through the keyboard is an important part of promoting <u>device independence</u> in <u>target user</u> agents.

- **WEB-RP-15:** Clear Link Target Information Clearly identify the target of each link. WAI WCAG checkpoint <u>13.1</u>
- **WEB-RP-16: Clear Site Layout** Provide information about the general layout of a site (e.g., a site map or table of contents). WAI WCAG checkpoint 13.3
- **WEB-RP-17: Observe Operating Environment Conventions** Observe operating environment conventions for the <u>user agent user interface</u>, documentation, input configurations and installation. Part of user agent accessibility involves following the conventions of the user's operating environment, including:
 - Following <u>operating environment</u> conventions for <u>user agent user</u> <u>interface</u> design, <u>documentation</u> and installation.
 - Incorporating <u>operating environment level</u> user preferences into the user agent.
- **WEB-RP-18:** Provide Alternate Information Delivery To enhance a user's experience with a website, Webmasters should implement features that allow a user to request high-contrast colors (for users with low vision) or graphical rendering of audio cues (for users with hearing disabilities).

WEB-RP-19: Consistent Navigation Mechanisms – Use navigation mechanisms in a consistent manner. WAI WCAG checkpoint <u>13.4</u>

WEB-RP-20: Allow Configuration Not to Render Some Content that May Reduce Accessibility – Ensure that the user may turn off rendering of content (e.g., audio, video, scripts) that may reduce accessibility by obscuring other content or disorienting the user.

Rationale:

Some content or behavior specified by the author may make the user agent unusable or may obscure information. If you offer audio or video content, allow the user to manually start the content. Do not have audio and video content start automatically when a page loads.

For instance, flashing content may trigger seizures in people with photosensitive epilepsy, or may make a web page too distracting to be usable by someone with a cognitive disability. Blinking text can affect screen reader users since screen readers (in conjunction with speech synthesizers or Braille displays) may re-render the text every time it blinks. Distracting background images, colors, or sounds may make it impossible for users to see or hear other content. Dynamically changing web content may cause problems for some assistive technologies. Scripts that cause unanticipated changes (e.g., viewports that open without notice or automatic content retrieval) may disorient some users with cognitive disabilities

Central Repository of Forms

A Central Repository of Forms is a page that allows visitors to access all forms on a given site. This is often a list of links to available forms.

WEB-R-18: Central Repository of Forms This requirement was rescinded on 10/19/2011.

Contact Instructions

Contact Instructions provide information to visitors that enable them to contact the agency for help, for example by phone or e-mail.

WEB-R-19: Contact Instructions – The Contact Us page is accessible from the home page <u>footer</u> shall include, at a minimum, the agency's:

- Mailing address;
- FAX number;
- Phone number, <u>including a</u> toll-free number <u>and/or</u>, TTY number <u>if</u> <u>available</u>; and an
- E-mail link to the an agency contact.

Custom 404 Error Message

A Custom 404 Error Message is a customized message returned to website visitors when a requested web page is not found.

WEB-R-20: Custom 404 Error Message - This requirement became a recommended practice on 10/19/2011

WEB-R<u>P</u>-35: Custom 404 Error Message - Agencies should implement a custom 404 error message page. Whenever possible, have the server redirect the user to the new page.

Rationale:

The 404 Error Message is the frequently seen Hypertext Transfer Protocol (HTTP) status code that informs a web user that a requested page is "Not found." By creating custom contents for a 404 status code page and substitute it for the 404 page that the browser usually provides, the Webmaster can personalize the message and encourage the user to notify the Webmaster so that the situation can be fixed and provide the user other ways to find the information they're looking for (e.g. a link to the site map page or a site search box)."

Search Engine

A search engine allows visitors to search online content. Public agency sites will have a site-specific search (to search the current website) and a Commonwealth search (to search all state agency sites).

WEB-R-24: Search Engine Public Search Engine Compatibility – All public content posted on a Virginia government website shall be searchable and discoverable through public search engines.

WEB-R-25: Search Engine META Tags – Every page on an agency website shall contain an accurate meta description in order to ensure any search engine (agency, statewide search, or public search engine such as Yahoo or Google) can display meaningful search results.

Rationale:

To assist search engines in indexing or "crawling" the dynamic content on a government website. The description meta tag is generally shown beneath the links in search results. Having meaningful description meta tag text helps search engine users choose the correct link to find the information they are looking for.

WEB-R-21: Sitemap XML File – Each agency shall include an XML sitemap at the root level of the site to facilitate statewide search.

WEB-R-22: Search Engine Site Map Engine XML Schema – The sitemap XML shall follow the XML schema standard as defined on the WATG site (http://www.vadsa.org/watg/).

WEB-R-23: Search Engine Updating Agency Search Sitemaps XML Files – Agency Webmasters shall update their agency XML search sitemap on a regular basis as substantial updates are made to the site and particularly if a large number of new URLs representing significant new content are added. New sitemap files are not needed to reach content changes on existing URLs.

Rationale:

By updating the search sitemap in this manner, the users will experience a better, more accurate search.

- **WEB-R-26:** Search Engine Periodic Search Testing All Webmasters shall test search results relevant to their agency name and content on a regular basis.
- WEB-RP-21: Usable Search Engines Results The recommended practice was combined with WEB-R-25 on 07/00/2011
- **WEB-RP-22:** Audience Focused Search Engines—Results Websites should use a search engine technology that is able to handle the needs of their audience.
- WEB-RP-23: Search Engine Updating Agency Search Sitemaps Database URLs

 Variable Data and Search Engine Results Webmasters should take particular care to examine and include in their XML sitemap schema those URLs behind database content and interactive forms, as these are historically more difficult for search engines to index.

Internet Privacy Policy Statement

The Internet Privacy Policy Statement tells visitors how any collected personal information is handled on the site. It also contains other information about the site.

- **WEB-R-27: Internet Privacy Policy and Statement –** To comply with Code of Virginia, § <u>2.2-3803</u> (B) at a minimum each agency shall:
 - Develop an Internet privacy policy and an Internet privacy policy statement that explains the policy to the public; and,
 - Tailor the policy and the statement to reflect the information practices of the individual agency.
- WEB-R-28: Internet Privacy Policy and Statement Collection of Information To comply with Code of Virginia, § 2.2-3803 (B) at a minimum, the Internet Privacy Policy and Internet Privacy Policy Statement shall address:
 - What information, including personally identifiable information, will be collected, if any;
 - Whether any information will be automatically collected simply by accessing the website and, if so, what information;
 - Whether the website automatically places a computer file, commonly referred to as a "cookie," on the Internet user's computer and, if so, for what purpose; and,
 - How the collected information is being used or will be used.

Except for those systems listed in the Code of Virginia, § $\underline{2.2-3802}$, as exempt, the following also shall be included:

 A prescribed procedure for an individual to learn the purpose for which information has been recorded and particulars about its use and dissemination; and A clearly prescribed and uncomplicated procedure for an individual to correct, erase or amend inaccurate, obsolete or irrelevant information.

Rationale:

Modern information technology tools have the potential to extend the meaning of "personal information" to include the web browsing habits of users of the Internet. Web browsers have been designed with the ability to collect and pass potentially identifying information via "cookies" of which the user may not even be aware. Internet servers collect very specific information necessary to allow the transfer of information between computers.

- **WEB-R-29:** Internet Privacy Policy Statement Link Location A link to the Internet Privacy Policy Statement shall be featured in a conspicuous manner on the website home page, in the page footer.
- **WEB-R-30:** Internet Privacy Policy Statement Data Retention The statement shall state that any personal information that is collected and retained is maintained in compliance with the *Code of Virginia*, §§ 2.2-3800 and 2.2-3803.
- WEB-R-31: Internet Privacy Policy Statement Freedom of Information Act (FOIA) The statement shall remind users that information collected on this site may be provided to anyone that requests it under the Virginia Freedom of Information Act.
- **WEB-R-32:** Internet Privacy Policy Related Requirements All agency websites shall have a web policy. The web policy shall include the following:
 - Disclaimer a statement that indemnifies the Commonwealth from responsibility for third party or externally linked content
 - Link policy a policy stating the criteria that allows a link to be placed on the site.
 - FOIA a statement that explains the agency's Freedom of Information Act policies and contacts.
 - Plug-ins a list of links visitors can use to download any plug-ins used by the site. (e.g. Macromedia Flash, Adobe Acrobat Reader, etc.) Note that pages that use plug-ins also must link to required plug-ins.

Rationale:

This section provides agencies with Internet websites direction for developing an Internet Privacy Policy and an Internet Privacy Policy Statement in compliance with the *Code*.

Citizen Cyber Security Awareness Banner

The Citizen Cyber Security Awareness Banner is a warning to users that appears above online requests for personal information or passwords. It contains a link to VITA's online guide to protecting personal information.

WEB-RP- 24: Due to the ever-increasing threats posed by malware running on citizen computers, it is suggested agencies utilize the cyber security awareness banner from the Cyber Security Toolkit on all Internet facing citizen and partner applications where authentication is required, or where any personally identifiable information may be exchanged between the agency and your customers. Agencies are strongly encouraged to further promote the banner on their sites in October and provide a link to the CSRM toolkit.

Rationale:

To assist all agencies in their efforts to increase Cyber Security Awareness, the Virginia Information Technologies Agency has made a Cyber Security Toolkit available online. This toolkit was produced by the Multi-State Information Sharing and Analysis Center (MS-ISAC) in collaboration with the U.S. Department of Homeland Security and the National Cyber Security Alliance as part of the National Cyber Security Awareness Month Campaign.

The toolkit is designed to help promote the delivery of a consistent cyber security awareness message and can become a cost efficient component of an agency's Cyber Security Awareness Program. Instructions for printing and branding are also included. The toolkit may be accessed online at: http://www.vita.virginia.gov/security/default.aspx?id=5146

For questions or more information, please contact VITA Security Services at: VITASecurityServices@VITA.Virginia.Gov

Example of the Citizen Cyber Security Awareness Banner:

The security of your personal information is important to us!

Diligent efforts are made to ensure the security of Commonwealth of Virginia systems. Before you use this website to conduct business with the Commonwealth, please ensure your personal computer is not infected with malicious code that collects your personal information. This code is referred to as a <u>keylogger</u>. The way to protect against this is to maintain current <u>anti-virus</u> and <u>security patches</u>.

For more information on protecting your personal information online, refer to <u>Guide to Online Protection</u> and the <u>Online Protection Glossary</u>.

Virginia Common Template - Site Design Considerations

This section addresses various considerations related to the design of an agency website, including site scalability and the use of fonts, frames, and style sheets.

Site Scalability

Site Scalability refers to the ability of the site to become narrower or wider depending on the visitor's browser's window width.

WEB-R-33: Site Scalability - Websites using the template shall be made in scalable

format. No absolute width specifications shall be placed in <u>on</u> the Commonwealth Banner, <u>Agency</u> <u>Site</u> Banner <u>and</u> Navigation Trail, content, or footer sections <u>beyond the use of a maximum width</u>.

WEB-R-34: Browser – All template sites shall display and operate within

most common browsers in a consistent manner. The most common browsers include, but are not limited to, Explorer,

Mozilla/Netscape and Firefox.

Rationale:

Use of common browsers ensures access to state websites by the largest segment of users.

WEB-RP-25: User Control of User Interface Behavior – Permit user control of the view points or warn the user about the behavior of viewports, including

those that may be manipulated by the author (e.g., through scripts).

Rationale:

Control of <u>viewport</u> behavior is important to accessibility. Unexpected changes to the <u>point of regard</u> — what the user is presumed to be viewing — may cause users to lose track of how many <u>viewports</u> are open, or which viewport has the <u>current focus</u>. If carried out automatically, these changes might go unnoticed (e.g., by some users with blindness) or be disorienting (e.g., to some users with a cognitive disability).

Font Families

Font Families refers to the font types used to display text (Arial, Times Roman, etc.).

WEB-R-35: Fonts – Fonts shall be selected only from the following choices:

- San-Serif font families: Arial, Helvetica, Tahoma, Verdana, and Geneva (include the generic sans-serif type for users that do not have the previous specified fonts); and
- Serif font families: Times New Roman, Times, Georgia, and Courier (include the generic serif type for users that do not have the previous specified fonts).

Rationale:

The additional san-serif and serif fonts permit more variety among highly legible fonts and the explanatory language clarifies the compliant font families and font type.

Frames

Frames refer to dividing the screen into areas each of which draws content from a separate file and has independent scrollbars.

WEB-R-36: Frames – The use of HTML frames is prohibited; however, the

recommendations (see:

http://www.w3.org/TR/html4/present/frames.html#h-16.5) are fully compliant, which allows authors to insert a frame within a block of text.

Rationale:

Although not expressly prohibited by Level A, the use of HTML frames poses a significant barrier to usability and accessibility and is prohibited by the current version of the Virginia IT Accessibility Standard (ITRM GOV103) for sites using the Virginia Common Template. IFRAMES provide Webmasters with the ability display content in frames while making the content accessible to assistive technology.

Style Sheets

Style Sheets, are <u>also known as</u> Cascading Style Sheets (CSS files), <u>are</u> used to control the appearance of web pages.

WEB-R-37: Style Sheets – Agencies shall use style sheets to control the <u>website</u> layout whenever possible. Tables shall not be used for layout unless they make sense when linearized. WAI WCAG checkpoint 3.3

Rationale:

Using tables for layout can confuse screen readers if the content does not make sense when linearized (read left-to-right, top-to-bottom). CSS allows you to put content in <div>s and position <div>s so both visual layout and read order can be controlled.

- **WEB-RP-26:** Mark-up Language Use When an appropriate markup language exists, use markup rather than images to convey information. WAI WCAG checkpoint 3.1
- **WEB-RP-27:** Mark-up Language Attribute Use Use relative rather than absolute units in mark-up language attribute values and style sheet property values. WAI WCAG checkpoint 3.4
- **WEB-RP-28:** Mark-up Language List Item Use Mark-up lists and list items properly since ordered lists help non-visual users navigate. WAI WCAG checkpoint 3.6
- **WEB-RP-29:** Tables Transform This recommended practice is stated in WEB-R-37 and was rescinded on 07/00/2011.

Rationale:

The recommendation is covered in WEB-R-37.

WEB-RP-30: Data Tables Summaries – Provide summaries for data tables. WAI WCAG checkpoint <u>5.5</u>

WEB-RP-31: Transformation of Pages Featuring Applets and/or Scripts – For scripts and applets, ensure that event handlers are input device independent. WAI WCAG checkpoint 6.4

WEB-RP-32: Validate to Published Formal Grammars – Create tables that are published to formal grammars. WAI WCAG checkpoint 3.2

Rationale:

Validating to a published formal grammar and declaring that validation at the beginning of a document lets the user know that the structure of the document is sound. It also lets the user agent know where to look for semantics if it needs to. The W3C Validation Service validates documents against a whole list of published grammars. Developers can identify a page's formal grammar by using the !DOCTYPE tag.

Link Modification

Link Modification refers to the process of alerting the Virginia.gov portal of new, updated or outdated links to agency websites.

Each agency's Webmaster is required to notify Virginia.gov of link changes. Due to the complexity of the Virginia.gov portal, it is critical that each agency be held accountable for the content found on its individual websites. This agency accountability is the only way the Commonwealth of Virginia can provide the public with the most current and accurate information.

WEB-R-38: Link Modification Standard: Virginia Interactive (VI) Webmaster Database - Each agency's Webmaster shall be registered in the VI Webmaster database.

- Once a member, each Webmaster shall be assigned a user ID and password that shall allow access and permission to add, modify or delete links on the Virginia.gov portal.
- Webmasters shall submit a request to be added to the database along with their contact information (full name, title, phone, e-mail, fax number, mailing address) on official agency letterhead via email from their state agency e-mail address. This request must be e-mailed to the Virginia.gov Webmaster at: webmaster@virginia.gov.

WEB-R-39: Link Modification Requirements: Change Request Form: Agency's link added, modified or deleted - Each time an agency's link on the portal needs to be added, modified or deleted, an agency's Webmaster shall use the form at:

<u>http://www.virginia.gov/cmsportal3/government 4096/adding a link.ht</u>
<u>ml</u> to make a link change request. If the link is in the "Virginia.gov Community Database" at:

(http://www.vipnet.org/community/hub page.htm) then the Webmaster is to use the submission form at:

http://www.vipnet.org/community/localsubmission.htm

When an agency, locality or other government entity creates a website that it wishes to include in the Virginia.gov portal, that agency, locality

or other government entity shall follow the process identified in this requirement.

WEB-R-42 Social Media – The use of social media is an agency business decision.

- Agencies choosing to use social media sites and accounts are responsible for acceptable use, internal processes and ongoing monitoring.
- Agencies which choose to participate in social media initiatives are responsible for risk management and must consult with agency security personnel and develop agency specific policies for acceptable use.

Implementation

Agency Implementation Plan

An Agency Implementation Plan documents the results of the agency's analysis of its website for compliance with the requirements identified in this document and as needed, how the agency plans to bring the current information on its website into compliance with those requirements and how the agency will ensure that future content is also compliant.

WEB-R-40:

Agency Implementation Plan – Each agency shall develop a plan describing how and when it intends to meet the website related (all "WEB-R-nn" labeled requirements, where "nn" is the specific requirement number) requirements identified in this document and update the plan when there is a subsequent material change to the plan.

The agency plan shall contain an analysis of the website for compliance with the related requirements identified in this document, identify by requirement number all current non-compliant items, identify agency plans and schedules for correcting all non-compliant pages, and identify the agency's process and procedures for ensuring future web content is compliant. (Note – Appendix A of the current *Website Topic Report* provides additional guidance in developing agency implementation plans)

WEB-R-41:

Implementation Plan Submittal – Each agency shall provide an electronic copy or a hard copy of its current agency implementation plan (initial and revised) to the Director of VITA's Policy, Practice and Architecture Division. Electronic copies should be submitted to at: EA@vita.virginia.gov Attention: Director.

Web 2.0

Web 2.0 is an approach to web design where, instead of maintaining tight control of content and data access, access is freely given and encouraged. Content is often created by users. Web 2.0 can include technology and systems that enable collaboration such as AJAX, APIs, mashups, data feeds, shared user-generated content and user generated tagging.

WEB-RP-33: Web 2.0 – For all Web 2.0 items on an agency website, there should be an alternative method for users with disabilities to obtain the information presented.

Rationale:

Web 2.0 is a very broad term that encompasses a wide variety of website items and functionality, many of which may not work for different disabled users.

RSS (Really Simply Syndication)

RSS is a web feed format. An RSS file can be automatically read by a visitor's RSS software if the visitor "subscribes" to the RSS feed. Usually RSS feeds are used to publish timely information (such as news, job openings, updated information, events, etc.).

WEB-RP-34: RSS – Provide RSS feeds to facilitate the ease of users subscribing to changing news items or information from your agency website.

Rationale:

RSS feeds are useful for such items as press releases, alerting subscribers when new items have been added to the site or of updates to the site.

WEB RP-35: Mobile Applications – If an agency chooses to implement mobile applications, they should be checked through the agency information security officer and also echo agency branding as practicable.

Technology Component Standard

For information regarding browser technology components standards please refer to the table for Productivity/Management Software Technology Component Standard <u>PLA-S-07</u> in the Platform Domain Report. To access the report click here: <u>Platform Domain Report</u> or copy the following URL into your browser:

http://www.vita.virginia.gov/uploadedFiles/Oversight/EA/ETAPlatformDomainReport.pdf .

Website Compliance Tools on Statewide Contract

To assist an agency in developing or remediating its website to comply with the website requirements in this domain topic, please refer to the website and IT accessibility section of the VITA website. To access this section click here: Website and IT accessibility or copy the following URL into your browser: http://www.vita.virginia.gov/library/default.aspx?id=663.

Appendices

Appendix A: Implementation Plan

Implementation Plan Questions

(a) Plan Strategy

Describe how the agency addresses each of the following:

- (i) The agency's overall effort:
 - Who will lead the compliance effort? (name, title, phone & e-mail);
 - Who will lead the web conversion or clean-up effort? (name, title, phone & e-mail);
 - To whom does that person report? (name, title & email);
 - Who will educate the agency on the need to comply with the Website Topic Report?
- (ii) The agency's plans for producing new, compliant pages.
 - Who has development access rights to the web servers and websites or the number with such access?
 - How will you avoid adding non-compliant pages to the website?
- (iii) The agency's plans for checking existing pages for compliance problems.
 - How will the agency check for non-compliant pages?
 - Who will do the compliancy checking?
 - How will the agency prioritize its web work? Possible options to consider:
 - the entire site at once,
 - o the most popular (highest hit) pages,
 - o pages that are of most interest to your disabled audience,
 - by folder or feature,
 - o by a specific number of levels deep from your main home page,
 - o by file type (HTML, PDF, other), or
 - o a combination of the above
- (iv) The agency's plans for converting non-compliant pages.
 - How will the agency prioritize your work?
 - How will staff be allocated to this phase? (Will they be assigned specific areas of the website? Will they be given production quotas?)

(b) Plan Milestones

Provide information in a table with a column for *Milestones* and a column for *Target Dates*, as illustrated in the example below:

Milestone	Target Date

(c) Existing Web Page Count

- (i) Provide the number of web pages/files on the agency's website(s) and web based-applications.
- (ii) Explain how and when the agency will obtain the number.

(d) Staff Resources

Show the amount of staff resources to be assigned to the agency's site modifications in any of the following manners.

- (i) Number of staff times the average number of hours each will work per month.
- (ii) Number of FTE's to be assigned to the modification effort.

(e) Future Staff

Indicate any substantial changes to staff resources anticipated over time, and how your plan will manage the changes.

(f) Signature

The plan must be signed and dated by the agency head or equivalent. Please print the individual's title. Plans must be submitted by e-mail to *EA@vita.virginia.gov*.

Appendix B: Resources and Links

Additional resources and information (validation information, accessibility requirements information, compliancy information, code examples, etc.) may be found on the <u>WATG site</u> (<u>www.vadsa.org/watg/</u>).